EVOLUTION

INTERNATIONAL JOURNAL OF ORGANIC EVOLUTION

Volume XXXIX, 1985

ROGER D. MILKMAN
Editor

J. DAVID BALDWIN
Editorial Assistant

Published Bimonthly
At Allen Press, Inc., Lawrence, Kansas 66044
By the
Society for the Study of Evolution

CONTENTS OF VOLUME 39

ADKISSON, KAREN P. (see Turner, Bruce J.) 122
AGUADE, MONTSERRAT. (see Prevosti, Antonio) 838
ALBERCH, PERE, AND EMILY A. GALE. A developmental analysis of an evolutionary trend: Digital reduction in amphibians. 8
ALCOCK, J. (see Snead, J. S.) 1123
ALLENDORF, FRED W. (see Leary, Robb F.) 308
ALLENDORF, FRED W. (see Leary, Robb F.) 1318
ALTUKHOV, YURI P. Two kinds of genetic variability and the problem of speciation. 223
ANTLFINGER, ANN E., WILLIAM F. CURTIS, AND OTTO T. SOLBRIG. Environmental and genetic determinants of plant size in *Viola sororia*. 1053
ANTONOVICS, JANIS. (see Clay, Keith) 205
ANTONOVICS, JANIS. (see Clay, Keith) 335
ANTONOVICS, JANIS. (see Ellstrand, Norman C.) 657
ARCHIE, JAMES W. Statistical analysis of heterozygosity data: Independent sample comparisons. 623
ARCHIE, JAMES, CHRIS SIMON, AND DANIEL WARTENBERG. Geographical patterns and population structure in periodical cicadas based on spatial analysis of allozyme frequencies. 1261
ARCHIE, JAMES W. (see Simon, Chris) 463
ARMBRUSTER, W. SCOTT. Patterns of character divergence and the evolution of reproductive ecotypes of *Dalechampia scandens* (Euphorbiaceae). 733
ARNOLD, MICHAEL L. (see Baker, Robert J.) 233
ARNOLD, STEVAN J. (see Houck, Lynne D.) 370
AVISE, JOHN C. (see Kessler, Louis G.) 831
AVISE, JOHN C. (see Neigel, Joseph E.) 724
AYRE, DAVID J. Localized adaptation of clones of the sea anemone *Actinia tenebrosa*. 1250
AYRE, DAVID J. (see Stoddart, James A.) 461
BAKER, MYRON C., DIANA F. TOMBACK, DANIEL B. THOMPSON, AND MICHAEL A. CUNNINGHAM. Reply to Hafner and Petersen. 1177
BAKER, ROBERT J., JOHN W. BICKHAM, AND MICHAEL L. ARNOLD. Chromosomal evolution in *Rhogeessa* (Chiroptera: Vespertilionidae): Possible speciation by centric fusions. 233
BARNES, PHILLIP T., AND DAVID J. MERRELL. Mating preference and its relevance to adaptation in *Drosophila melanogaster*: Inversion polymorphism and DDT resistance. 1100
BARRETT, SPENCER C. H., AND DEBORAH E. GLOVER. On the Darwinian hypothesis of the adaptive significance of tristyly. 766
BEKOFF, MARC. Evolutionary bases of social behavior. (review) 1401
BICKHAM, JOHN W. (see Baker, Robert J.) 233
BLACKBURN, D. G. (see Hayssen, V.) 1147
BOECKLEN, WILLIAM J., AND CATHLEEN NESMITH. Hutchinsonian ratios and log-normal distributions. 695
BOWERS, M. DEANE, IRENE L. BROWN, AND DARRYL WHEYE. Bird predation as a selective agent in a butterfly population. 93
BREZNAK, JOHN A. (see Howard, Daniel J.) 405
BROTHERS, EDWARD B. (see Thresher, Ronald E.) 878

BROWER, LINCOLN P., AND WILLIAM H. CALVERT. Foraging dynamics of bird predators on overwintering monarch butterflies in Mexico. 852
BROWN, IRENE L. (see Bowers, M. Deane) 93
BROWN, KENNETH M. Intraspecific life history variation in a pond snail: The roles of population divergence and phenotypic plasticity. 387
BUCHANAN, DREW B. (see Moore, William S.) 135
BULL, J. J., AND E. L. CHARNOV. On irreversible evolution. 1149
BUSH, GUY L. (see Howard, Daniel J.) 405
CALVERT, WILLIAM H. (see Brower, Lincoln P.) 852
CAMPBELL, DIANE R. Pollen and gene dispersal: The influences of competition for pollination. 418
CARSON, HAMPTON L. Genetic variation in a courtship-related male character in *Drosophila silvestris* from a single Hawaiian locality. 678
CHARNOV, E. L. (see Bull, J. J.) 1149
CHESS, KEVIN F., AND JOHN M. RINGO. Oviposition site selection by *Drosophila melanogaster* and *Drosophila simulans*. 869
CHEVERUD, JAMES M., MALCOLM M. DOW, AND WALTER LEUTENEGGER. The quantitative assessment of phylogenetic constraints in comparative analyses: Sexual dimorphism in body weight among primates. 1335
CLAY, KEITH, AND JANIS ANTONOVICS. Demographic genetics of the grass *Danthonia spicata*: Success of progeny from chasmogamous and cleistogamous flowers. 205
CLAY, KEITH, AND JANIS ANTONOVICS. Quantitative variation of progeny from chasmogamous and cleistogamous flowers in the grass *Danthonia spicata*. 335
CLEGG, MICHAEL T. (see Schoen, Daniel J.) 1242
CLUTTON-BROCK, T. H. (see Harvey, Paul H.) 559
COHAN, FREDERICK M., AND JEAN-DANIEL GRAF. Latitudinal cline in *Drosophila melanogaster* for knockdown resistance to ethanol fumes and for rates of response to selection for further resistance. 278
COLLIER, GLEN E., AND STEPHEN J. O'BRIEN. A molecular phylogeny of the Felidae: Immunological distance. 473
COOKE, FRED, C. SCOTT FINDLAY, ROBERT F. ROCKWELL, AND JUDITH SMITH. Life history studies of the Lesser Snow Goose (*Anser caerulescens caerulescens*). III. The selective value of plumage polymorphism: Net fecundity. 165
COOKE, FRED. (see Findlay, C. Scott) 904
COOKE, FRED. (see Rockwell, Robert F.) 178
CUNNINGHAM, MICHAEL A. (see Baker, Myron C.) 1177
CURTIS, WILLIAM F. (see Antlfinger, Ann E.) 1053
DAMUTH, JOHN. Selection among "species": A formulation in terms of natural functional units. 1132
DAWSON, PETER S., AND PAUL B. SAMOLLOW. Chromosome evolution in *Tribolium* flour beetles: Evidence from linkage of the hexokinase-1 and malic enzyme loci in *T. castaneum* and *T. confusum*. 220
DOBSON, F. STEPHEN. The use of phylogeny in behavior and ecology. 1384
DODD, DIANE M. B., AND JEFFREY R. POWELL. Founder-flush speciation: An update of experimental results with *Drosophila*. 1388
DOW, MALCOLM M. (see Cheverud, James M.) 1335
DOWLING, THOMAS E., AND WILLIAM S. MOORE. Evidence for selection against hybrids in the family Cyprinidae (genus *Notropis*). 152

DYKHUIZEN, DANIEL E., CHRISTY MUDD, ANN HONEYCUTT, AND DANIEL L. HARTL. Polymorphic posttranslational modification of alkaline phosphatase in *Escherichia coli.* 1
EASTEAL, SIMON. The ecological genetics of introduced populations of the giant toad, *Bufo marinus.* III. Geographical patterns of variation. 1065
ELLSTRAND, NORMAN C., AND JANIS ANTONOVICS. Experimental studies of the evolutionary significance of sexual reproduction. II. A test of the density-dependent selection hypothesis. 657
FELLEY, JAMES D. (see Graham, John H.) 104
FELSENSTEIN, JOSEPH. Confidence limits on phylogenies: An approach using the bootstrap. 783
FIALA, KENT L., AND ROBERT R. SOKAL. Factors determining the accuracy of cladogram estimation: Evaluation using computer simulation. 609
FINDLAY, C. SCOTT, R. F. ROCKWELL, JUDITH A. SMITH, AND FRED COOKE. Life history studies of the Lesser Snow Goose (*Anser caerulescens caerulescens*). VI. Plumage polymorphism, assortative mating, and fitness. 904
FINDLAY, C. SCOTT. (see Cooke, Fred) 165
FINDLAY, C. SCOTT. (see Rockwell, Robert F.) 178
FIX, ALAN G. Evolution of altruism in kin-structured and random subdivided populations. 928
FLETCHER, DAVID J. C. (see Ross, Kenneth G.) 888
FRANK, STEVEN A. Hierarchical selection theory and sex ratios. II. On applying the theory, and a test with fig wasps. 949
FUTUYMA, DOUGLAS J. (see Harshman, Lawrence G.) 315
GALE, EMILY A. (see Alberch, Pere) 8
GANDERS, FRED R. (see Helenurm, Kaius) 753
GARCIA, M. PILAR. (see Prevosti, Antonio) 838
GILBERT, D. G. Comment on mutagenesis and competition in *Drosophila.* 940
GILBERT, D. G., AND W. T. STARMER. Statistics of sexual isolation. 1380
GLOVER, DEBORAH E. (see Barrett, Spencer C. H.) 766
GOODNIGHT, CHARLES J. The influence of environmental variation on group and individual selection in a cress. 545
GOTTLIEB, L. D. (see Warwick, S. I.) 1236
GOULD, STEPHEN JAY. Recording marvels: The life and work of George Gaylord Simpson. 229
GOULD, STEPHEN JAY, NELSON D. YOUNG, AND BILL KASSON. The consequences of being different: Sinistral coiling in *Cerion.* 1364
GRAF, JEAN-DANIEL. (see Cohan, Frederick M.) 278
GRAHAM, JOHN H., AND JAMES D. FELLEY. Genomic coadaptation and developmental stability within introgressed populations of *Enneacanthus gloriosus* and *E. obesus* (Pisces, Centrarchidae). 104
GRANT, B. R. Selection on bill characters in a population of Darwin's finches: *Geospiza conirostris* on Isla Genovesa, Galápagos. 523
GRAUR, DAN. Gene diversity in Hymenoptera. 190
GRUDZIEN, THADDEUS A. (see Turner, Bruce J.) 122
GYLLENSTEN, ULF. Temporal allozyme frequency changes in density fluctuating populations of willow grouse (*Lagopus lagopus* L.). 115
HAFNER, DAVID J., AND KAREN E. PETERSEN. Song dialects and gene flow in the White-Crowned Sparrow, *Zonotrichia leucophrys nuttalli.* 687
HARRISON, RICHARD G. Barriers to gene exchange between closely related cricket species. II. Life cycle variation and temporal isolation. 244

HARSHMAN, LAWRENCE G., AND DOUGLAS J. FUTUYMA. The origin and distribution of clonal diversity in *Alsophila pometaria* (Lepidoptera: Geometridae). 315
HARSHMAN, LAWRENCE G. (see Hoffmann, Ary A.) 638
HARTL, DANIEL L. (see Dykhuizen, Daniel E.) 1
HARVEY, PAUL H., AND T. H. CLUTTON-BROCK. Life-history variation in primates. 559
HASTINGS, ALAN. Evolution in the seasonal theta models. 709
HAYSSEN, V., AND D. G. BLACKBURN. Lactalbumin and the origins of lactation. 1147
HEBERT, PAUL D. N. Interspecific hybridization between cyclic parthenogens. 216
HEDRICK, PHILIP W. Genetics and conservation. (review) 1180
HELENURM, KAIUS, AND FRED R. GANDERS. Adaptive radiation and genetic differentiation in Hawaiian *Bidens*. 753
HENRY, CHARLES S. Sibling species, call differences, and speciation in green lacewings (Neuroptera: Chrysopidae: *Chrysoperla*). 965
HEYWARD, ANDREW J. (see Stoddart, James A.) 461
HEYWOOD, JOHN S., AND DONALD A. LEVIN. Associations between allozyme frequencies and soil characteristics in *Gaillardia pulchella* (Compositae). 1076
HILBISH, THOMAS J., AND RICHARD K. KOEHN. Exclusion of the role of secondary contact in an allele frequency cline in the mussel *Mytilus edulis*. 432
HILBISH, THOMAS J., AND RICHARD K. KOEHN. The physiological basis of natural selection at the *Lap* locus. 1302
HODGE, M. J. S. Darwinism and its challengers. (review) 1395
HOFFMAN, STEVEN G., MARK P. SCHILDHAUER, AND ROBERT R. WARNER. The costs of changing sex and the ontogeny of males under contest competition for mates. 915
HOFFMANN, ARY A., AND LAWRENCE G. HARSHMAN. Male effects on fecundity in *Drosophila melanogaster*. 638
HONEYCUTT, ANN. (see Dykhuizen, Daniel E.) 1
HOUCK, LYNNE D., STEVAN J. ARNOLD, AND RONALD A. THISTED. A statistical study of mate choice: Sexual selection in a Plethodontid salamander (*Desmognathus ochrophaeus*). 370
HOWARD, DANIEL J., GUY L. BUSH, AND JOHN A. BREZNAK. The evolutionary significance of bacteria associated with *Rhagoletis*. 405
HOWARD, RICHARD D., AND ARNOLD G. KLUGE. Proximate mechanisms of sexual selection in Wood Frogs. 260
JAENIKE, JOHN. Genetic and environmental determinants of food preference in *Drosophila tripunctata*. 362
JAENIKE, JOHN. Parasite pressure and the evolution of amanitin tolerance in *Drosophila*. 1295
JOHNSON, DIANA L. E. Genetic differentiation in the *Drosophila athabasca* complex. 469
JUILIANNA, JOHN. (see Travis, Joseph) 1087
JULIANO, STEVEN A., AND F. M. WILLIAMS. On the evolution of handling time. 212
KASSON, BILL. (see Gould, Stephen Jay) 1364

KASUYA, EIITI. Size-disassortative mating in the Chrysomelid beetle *Chrysolina aurichalcea* (Coleoptera: Chrysomelidae). 705
KAT, PIETER W. Historical evidence for fluctuation in levels of hybridization. 1164
KEEN, W. HUBERT. (see Travis, Joseph) 1087
KINGSOLVER, JOEL G., AND M. A. R. KOEHL. Aerodynamics, thermoregulation, and the evolution of insect wings: Differential scaling and evolutionary change. 488
KIRKENDALL, LAWRENCE R. (see Stenseth, Nils Chr.) 294
KLUGE, ARNOLD G. (see Howard, Richard D.) 260
KNUDSEN, KATHY L. (see Leary, Robb F.) 308
KNUDSEN, KATHY L. (see Leary, Robb F.) 1318
KOEHL, M. A. R. (see Kingsolver, Joel G.) 488
KOEHN, RICHARD K. (see Hilbish, Thomas J.) 432
KOEHN, RICHARD K. (see Hilbish, Thomas J.) 1302
KUKUK, PENELOPE F., AND BERNIE MAY. A re-examination of genetic variability in *Dialectus zephyrus* (Hymenoptera: Halictidae). 226
LANDE, RUSSELL, AND DOUGLAS W. SCHEMSKE. The evolution of self-fertilization and inbreeding depression in plants. I. Genetic models. 24
LANDE, RUSSELL. (see Schemske, Douglas W.) 41
LANDE, RUSSELL. (see Via, Sara) 505
LARSON, ALLAN. The evolution of fish species flocks. (review) 1396
LAUDER, GEORGE V. (see Shaffer, H. Bradley) 83
LEARY, ROBB F., FRED W. ALLENDORF, AND KATHY L. KNUDSEN. Inheritance of meristic variation and the evolution of developmental stability in Rainbow Trout. 308
LEARY, ROBB F., FRED W. ALLENDORF, AND KATHY L. KNUDSEN. Developmental instability and high meristic counts in interspecific hybrids of Salmonid fishes. 1318
LEUTENEGGER, WALTER. (see Cheverud, James M.) 1335
LEVIN, DONALD A. Reproductive character displacement in *Phlox*. 1275
LEVIN, DONALD A. (see Heywood, John S.) 1076
LEVIN, DONALD A. (see Schmidt, Kurt P.) 396
LYNCH, MICHAEL. Spontaneous mutations for life-history characters in an obligate parthenogen. 804
MAXSON, L. R. (see Roberts, J. D.) 325
MAY, BERNIE. (see Kukuk, Penelope F.) 226
MCCLENAGHAN, LEROY R., JR., MICHAEL H. SMITH, AND MICHAEL W. SMITH. Biochemical genetics of mosquitofish. IV. Changes of allele frequencies through time and space. 451
MCCRACKEN, GARY F. (see Wilkinson, Gerald S.) 1169
MCKINNEY, MICHAEL L., AND ROBERT M. SCHOCH. Titanothere allometry, heterochrony, and biomechanics: Revising an evolutionary classic. 1352
MCLAIN, DENSON K., KARAMJIT S. RAI, AND P. NAGESH RAO. Ethological divergence in allopatry and asymmetrical isolation in the South Pacific *Aedes scutellaris* subgroup. 998
MERÇOT, H. A molecular approach to the role of historicity in evolution. I. Experimental design with enzyme polymorphism in *Drosophila melanogaster*. 819
MERRELL, DAVID J. (see Barnes, Phillip T.) 1100

MILLIGAN, BROOK G. Evolutionary divergence and character displacement in two phenotypically-variable, competing species. 1207
MITCHELL-OLDS, THOMAS, AND DONALD M. WALLER. Relative performance of selfed and outcrossed progeny in *Impatiens capensis*. 533
MONCLÚS, MARIA. (see Prevosti, Antonio) 838
MOORE, WILLIAM S., AND DREW B. BUCHANAN. Stability of the Northern Flicker hybrid zone in historical times: Implications for adaptive speciation theory. 135
MOORE, WILLIAM S. (see Dowling, Thomas E.) 152
MORAN, NANCY. (see Stenseth, Nils Chr.) 294
MUDD, CHRISTY. (see Dykhuizen, Daniel E.) 1
MURPHY, EDWARD C. Bergmann's rule, seasonality, and geographic variation in body size of House Sparrows. 1327
NEE, SEAN. On the rate of adaptive evolution. 1393
NEIGEL, JOSEPH E., AND JOHN C. AVISE. The precision of histocompatibility response in clonal recognition in tropical marine sponges. 724
NESMITH, CATHLEEN. (see Boecklen, William J.) 695
NIKLAS, KARL J. The evolution of tracheid diameter in early vascular plants and its implications on the hydraulic conductance of the primary xylem strand. 1110
NISHIKAWA, KIISA C. Competition and the evolution of aggressive behavior in two species of terrestrial salamanders. 1282
NUNNEY, LEN. Female-biased sex ratios: Individual or group selection? 349
O'BRIEN, STEPHEN J. (see Collier, Glen E.) 473
OLSON, STORRS L. Faunal turnover in South American fossil avifaunas: The insufficiencies of the fossil record. 1174
OWEN, ROBIN E. Difficulties with the interpretation of patterns of genetic variation in the eusocial Hymenoptera. 201
PALMER, A. RICHARD. Quantum changes in gastropod shell morphology need not reflect speciation. 699
PARKER, MATTHEW A. Local population differentiation for compatibility in an annual legume and its host-specific fungal pathogen. 713
PASHLEY, DAVID N. (see Pashley, Dorothy Prowell) 985
PASHLEY, DOROTHY PROWELL, KARAMJIT S. RAI, AND DAVID N. PASHLEY. Patterns of allozyme relationships compared with morphology, hybridization, and geologic history in allopatric island-dwelling mosquitoes. 985
PEASE, CRAIG M. A coevolutionary isomorphism applied to laboratory studies of competition. 444
PETERSEN, KAREN E. (see Hafner, David J.) 687
PFENNIG, DAVID W. (see Reeve, Hudson K.) 200
POWELL, JEFFREY R. (see Dodd, Diane M. B) 1388
PREVOSTI, ANTONIO, L. SERRA, G. RIBO, M. AGUADE, E. SAGARRA, M. MONCLÚS, AND M. P. GARCIA. The colonization of *Drosophila subobscura* in Chile. II. Clines in the chromosomal arrangements. 838
RAI, KARAMJIT S. (see McLain, Denson K.) 998
RAI, KARAMJIT S. (see Pashley, Dorothy Prowell) 985
RAO, P. NAGESH. (see McLain, Denson K.) 998
REEVE, HUDSON K., JAN SHELLMAN REEVE, AND DAVID W. PFENNIG. Eusociality and genetic variability: A re-evaluation. 200
REEVE, JAN SHELLMAN. (see Reeve, Hudson K.) 200
RIBO, GRISELDA. (see Prevosti, Antonio) 838

RICE, WILLIAM R. Disruptive selection on habitat preference and the evolution of reproductive isolation: An exploratory experiment. 645
RINGO, JOHN M. (see Chess, Kevin F.) 869
RISKA, BRUCE. Group size factors and geographic variation of morphometric correlation. 792
ROBERTS, J. D., AND L. R. MAXSON. Tertiary speciation models in Australian anurans: Molecular data challenge Pleistocene scenario. 325
ROCKWELL, ROBERT F., C. SCOTT FINDLAY, FRED COOKE, AND JUDITH A. SMITH. Life history studies of the Lesser Snow Goose (*Anser caerulescens caerulescens*). IV. The selective value of plumage polymorphism: Net viability, the timing of maturation, and breeding propensity. 178
ROCKWELL, R. F. (see Cooke, Fred) 165
ROCKWELL, R. F. (see Findlay, C. Scott) 904
ROSEN, GERALD. Parameter evolution in the θ model. 707
ROSS, KENNETH G., AND DAVID J. C. FLETCHER. Genetic origin of male diploidy in the fire ant, *Solenopsis invicta* (Hymenoptera: Formicidae), and its evolutionary significance. 888
ROUGHGARDEN, JONATHAN. (see Rummel, John D.) 1009
RUMMEL, JOHN D., AND JONATHAN ROUGHGARDEN. A theory of faunal buildup for competition communities. 1009
SAGARRA, ELISABET. (see Prevosti, Antonio) 838
SAMOLLOW, PAUL B. (see Dawson, Peter S.) 220
SCHAAL, BARBARA A. (see Sytsma, Kenneth J.) 582
SCHAAL, BARBARA A. (see Sytsma, Kenneth J.) 594
SCHEMSKE, DOUGLAS W., AND RUSSELL LANDE. The evolution of self-fertilization and inbreeding depression in plants. II. Empirical observations. 41
SCHEMSKE, DOUGLAS W. (see Lande, Russell) 24
SCHILDHAUER, MARK P. (see Hoffman, Steven G.) 915
SCHMIDT, KURT P., AND DONALD A. LEVIN. The comparative demography of reciprocally sown populations of *Phlox drummondii* Hook. I. Survivorships, fecundities, and finite rates of increase. 396
SCHOCH, ROBERT M. (see McKinney, Michael L.) 1352
SCHOEN, DANIEL J., AND MICHAEL T. CLEGG. The influence of flower color on outcrossing rate and male reproductive success in *Ipomoea purpurea*. 1242
SEGER, JON. Unifying genetic models for the evolution of female choice. 1185
SERRA, LUIS. (see Prevosti, Antonio) 838
SERVICE, PHILIP M., AND MICHAEL R. ROSE. Genetic covariation among life-history components: The effect of novel environments. 943
SHAFFER, H. BRADLEY, AND GEORGE V. LAUDER. Patterns of variation in aquatic Ambystomatid salamanders: Kinematics of the feeding mechanism. 83
SILANDER, JOHN A., JR. The genetic basis of the ecological amplitude of *Spartina patens*. II. Variance and correlation analysis. 1034
SILLÉN-TULLBERG, BIRGITTA. (see Wiklund, Christer) 1155
SIMON, CHRIS, AND JAMES ARCHIE. An empirical demonstration of the lability of heterozygosity estimates. 463
SIMON, CHRIS. (see Archie, James) 1261
SLATKIN, MONTGOMERY. Rare alleles as indicators of gene flow. 53
SMITH, JUDITH A. (see Cooke, Fred) 165
SMITH, JUDITH A. (see Findlay, C. Scott) 904
SMITH, JUDITH A. (see Rockwell, Robert F.) 178

SMITH, MICHAEL H. (see Wooten, Michael C.) 210
SNEAD, J. S., AND J. ALCOCK. Aggregation formation and assortative mating in two Meloid beetles. 1123
SOKAL, ROBERT R. (see Fiala, Kent L.) 609
SOLBRIG, OTTO T. (see Antlfinger, Ann E.) 1053
SOUTHWICK, CHARLES H. The lesser apes: Evolutionary and behavioral biology. (review) 1399
STARMER, W. T. (see Gilbert, D. G.) 1380
STENSETH, NILS CHR., LAWRENCE R. KIRKENDALL, AND NANCY MORAN. On the evolution of pseudogamy. 294
STEPHENS, TRENT D., AND TERESA R. STRECKER. Radial condensation in the axis of the evolving limb. 1159
STODDART, JAMES A., DAVID J. AYRE, BETTE WILLIS, AND ANDREW J. HEYWARD. Self-recognition in sponges and corals? 461
STRECKER, TERESA R. (see Stephens, Trent D.) 1159
SYTSMA, KENNETH J., AND BARBARA A. SCHAAL. Genetic variation, differentiation, and evolution in a species complex of tropical shrubs based on isozymic data. 582
SYTSMA, KENNETH J., AND BARBARA A. SCHAAL. Phylogenetics of the *Lisianthius skinneri* (Gentianaceae) species complex in Panama utilizing DNA restriction fragment analysis. 594
THISTED, RONALD A. (see Houck, Lynne D.) 370
THOMPSON, DANIEL B. (see Baker, Myron C.) 1177
THRESHER, RONALD E., AND EDWARD B. BROTHERS. Reproductive ecology and biogeography of Indo-West Pacific angelfishes (Pisces: Pomacanthidae). 878
TOMBACK, DIANA F. (see Baker, Myron C.) 1177
TONSOR, STEPHEN J. Intrapopulational variation in pollen-mediated gene flow in *Plantago lanceolata* L. 775
TRAVIS, JOSEPH, W. HUBERT KEEN, AND JOHN JUILIANNA. The effects of multiple factors on viability selection in *Hyla gratiosa* tadpoles. 1087
TURNER, BRUCE J., THADDEUS A. GRUDZIEN, KAREN P. ADKISSON, AND ROBERT A. WORRELL. Extensive chromosomal divergence within a single river basin in the Goodeid fish, *Ilyodon furcidens*. 122
UYENOYAMA, MARCY K. On the evolution of parthenogenesis. II. Inbreeding and the cost of meiosis. 1194
VIA, SARA, AND RUSSELL LANDE. Genotype-environment interaction and the evolution of phenotypic plasticity. 505
WALLER, DONALD M. (see Mitchell-Olds, Thomas) 533
WARNER, ROBERT R. (see Hoffman, Steven G.) 915
WARWICK, S. I., AND L. D. GOTTLIEB. Genetic divergence and geographic speciation in *Layia* (Compositae) 1236
WASSERMAN, FRED E. (see Wourms, Mark K.) 845
WHEYE, DARRYL. (see Bowers, M. Deane) 93
WIJSMAN, ELLEN. Reply to Gilbert. 941
WIKLUND, CHRISTER, AND BIRGITTA SILLÉN-TULLBERG. Why distasteful butterflies have aposematic larvae and adults, but cryptic pupae: Evidence from predation experiments on the monarch and the European swallowtail. 1155
WILKINSON, GERALD S., AND GARY F. MCCRACKEN. On estimating relatedness using genetic markers. 1169
WILLIAMS, F. M. (see Juliano, Steven A.) 212

WILLIS, BETTE. (see Stoddart, James A.) 461
WINKLER, DAVID W. Factors determining a clutch size reduction in California Gulls (*Larus californicus*): A multi-hypothesis approach. 667
WOODHEAD, ANDREA P. Sperm mixing in the cockroach *Diploptera punctata*. 159
WOOTEN, MICHAEL C., AND MICHAEL H. SMITH. Large mammals are genetically less variable? 210
WORRELL, ROBERT A. (see Turner, Bruce J.) 122
WOURMS, MARK K., AND FRED E. WASSERMAN. Butterfly wing markings are more advantageous during handling than during the initial strike of an avian predator. 845
WU, CHUNG-I. A stochastic simulation study on speciation by sexual selection. 66
YOUNG, NELSON D. (see Gould, Stephen Jay) 1364